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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/739,290	12/19/2003	Masud Jenabi	46417.001027	8840
21967	7590	03/09/2005	EXAMINER	
HUNTON & WILLIAMS LLP INTELLECTUAL PROPERTY DEPARTMENT 1900 K STREET, N.W. SUITE 1200 WASHINGTON, DC 20006-1109			AL NAZER, LEITH A	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/739,290

Applicant(s)

JENABI

Examiner

Leith A. Al-Nazer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites "the first RF signal" and "the second RF signal". There is a lack of antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 12, 13, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,933,108 to Mohuchy.

With respect to claims 12 and 13, Mohuchy teaches an antenna comprising a first substrate containing a plurality of transmitter chips (200 and 201 in figure 1), wherein each transmitter chip is comprised of a first series of phase shifters (210, 211,

220, 221, 240, 241, 250, and 251 in figure 3) to control the scan angle and linear polarization of an RF signal, a first 90 degree phase shifter (230 and 231 in figure 3) to control the circular polarization of an RF signal, and a first means (600) for controlling the first series of phase shifters and the first 90 degree phase shifter; a second substrate containing a plurality of transmitter chips (202 and 203), connected at the output of the first substrate, wherein each transmitter chip is comprised of a second series of phase shifters to control the scan angle and linear polarization of an RF signal, a second 90 degree phase shifter to control the circular polarization of an RF signal, and a second means (600) for controlling the second series of phase shifters and the second 90 degree phase shifter; and a balun substrate (left side of figure 1; column 4, lines 32-41) connected at the output of the second substrate containing a number of baluns that divides an RF signal into two equal signals that are 180 degrees out of phase with each other.

With respect to claim 17, Mohuchy teaches each of the substrates being designed using MMIC technology (column 6, lines 42-58).

With respect to claim 18, Mohuchy teaches each of the substrates being built using LTCC technology (column 6, lines 42-58).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,933,108 to Mohuchy in view of U.S. Patent No. 4,088,970 to Fassett et al.

Claim 14 requires the antenna be capable of transmitting with a single operating signal. Such a configuration is well known in the art, as is evidenced by Fassett (figure 4). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a single operating signal in the system of Mohuchy along with a coupler for coupling the single operating signal onto a second transmission line. The motivation for doing so would have been to perform two functions simultaneously on the same input operating signal.

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,933,108 to Mohuchy in view of Raby et al.

Claims 15 and 16 require the balun substrate comprise a number of radiator elements connected at the output of the baluns. Such a configuration is well known in

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the art, as is evidenced by Raby (left side of figure 1). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize radiator elements at the output of the baluns. The motivation for doing so would have been to transmit the output signal of the baluns, via an electromagnetic wave, to a distant target position.

9. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,933,108 to Mohuchy in view of Raby or U.S. Patent No. 4,088,970 to Fassett et al.

Claim 19 requires the various substrates be interconnected using a Fuzz-bottom interconnect. Such a configuration is well known in the art, as is evidenced by Raby (figure 1) and Fassett (figure 3). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to take the system of Mohuchy and utilize a Fuzz-bottom configuration. The motivation for doing so would have been to achieve a desired, compact configuration.

Claim 21 requires the various substrates be connected to the Fuzz-bottom interconnect using a film epoxy. Fassett teaches such a configuration (column 4, lines 10-23).

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,933,108 to Mohuchy in view of U.S. Patent No. 5,030,961 to Tsao.

Claim 20 requires each of the substrates be connected to an aluminum-graphite frame that provides a support and heat sinking mechanism for the substrates. Such a configuration is well known in the art, as is evidenced by Tsao (column 1, lines 50-62). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a frame support and heat sinking mechanism in the system of Mohuchy. The motivation for doing so would have been to provide a frame for solidifying the system and, at the same time, to provide a heat sinking mechanism. Such a setup prevents the use of elements used specifically for heat sinking, and therefore, the overall size and cost of the system is decreased.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A. Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA


TAN HO
PRIMARY EXAMINER